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January 12, 1993

ORIGINAL
FILE

BY HAND

Ms. Donna R. Searcy
Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

Re: Permissible Written Ex Parte Presentation in PR Docket No. 92-235

Dear Ms. Searcy:

Pursuant to Section 1.1206(a)(1) of the Commission's rules, enclosed herewith for filing with Commission are two copies of a letter from Associated Public-Safety Communications Officers, Inc. ("APCO") to the Chief of the Private Radio Bureau, Mr. Ralph Haller. The letter, which was hand-delivered to Mr. Haller today, addresses and offers recommended modifications to the Commission's Notice of Proposed Rulemaking in PR Docket No. 92-235. A copy of the letter has also been delivered to the FCC's Chief Engineer, Dr. Thomas Stanley.

Please contact the undersigned if you have any questions.

Respectfully submitted,

WILKES, ARTIS, HEDRICK & LANE
Chartered

By: Robert M. Gurss

Attorneys for APCO

Enclosures

cc: Mr. Ralph Haller
Dr. Thomas Stanley

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January 12, 1993

Mr. Ralph Haller
Chief, Private Radio Bureau
Federal Communications Commission
Washington, D.C. 20554

RE: PR Docket 92-235

Dear Mr. Haller:

On December 15, 1992, I and other representatives of APCO met with you and your staff to discuss our concerns regarding the Commission's proposal in the "spectrum refarming" docket (PR Docket 92-235). The Commission's proposal is intended to provide a significant increase in the number of channels available to land mobile services through the process of dividing existing channels into narrower segments. While this intent is commendable, and it is evident that the Commission has spent much time and effort in developing its proposal, APCO remains very concerned that many aspects of the proposal pose major problems for public safety. Performance of many systems would be reduced below acceptable levels, and there would not be any significant near term spectrum relief. During our meeting, we discussed and provided you with written materials regarding the following specific areas of concern:

1. Loss of public safety spectrum to other services in the 150 - 160 MHz band.

2. Interleaving of non-public safety services with those of public safety in certain portions of the spectrum, thus destroying the integrity of public safety block allocations.

3. The proposed 5 kHz channel width in the 150/160 MHz band.

4. Power limitation based on HAAT and ERP.

5. Reduction of modulation to 3 kHz.

6. Potential loss of many or most of the mobile relay station assignments presently operating in the 150/160 MHz band. This would be due primarily to incompatibility with proposed channel assignments and other limitations.

7. Lack of a migration plan which would provide near term relief and maintain interoperability, while at the same time be capable of developing into long term spectrum efficiency.

8. Elimination of discrete block allocations and multiple frequency coordinators for Public Safety channels.

We suggested during our meeting that the needs of public safety differed so greatly from other services that certain rules and perhaps sections of the rules should be specifically written for public safety services.

In response to our concerns, you recommended that APCO submit suggested modifications to the Commission's proposed rules that would address public safety's needs. The following outline further describes the principal problem areas that we have identified (other than frequency coordination) and suggests modifications to the proposal.

Please note that APCO is still developing an alternative proposal to address the problem of frequency coordination for the public safety radio channels below 470 MHz. APCO will submit its frequency coordination proposal to you as soon as possible.

<u>APCO Proposal</u>

1. Develop a separate section of the rules to apply to Public Safety only. These separate rules would be mainly concerned with channel assignment and usage, power and modulation limitations and similar issues. APCO is prepared to provide detailed information on each of the separate issues.

2. Change the proposed channel assignments in the 150/160 MHz band to eliminate the proposed interleaving of non-public safety services, and restore to public safety all of the spectrum which is presently allocated for that purpose in Part 90.

3. Recognize that current technology dictates 6.25 kHz as the narrowest feasible channel width for all channels in the 150/160 MHz band, the 450/512 MHz band and the 800 MHz and 900 MHz portion of the spectrum. This would be the end result of channel division, and would not be immediately possible with existing state of the art equipment.

4. Adopt 4 kHz as the maximum modulation deviation for FM stations. This is presently the standard for the NPSPAC 800 MHz channels and is the minimum recommended by major manufacturers as providing sufficient bandwidth to support a 9.6 kbs channel bit rate (as determined by Project 25 engineering and field tests.)

5. Adopt a two phase implementation plan as follows (see attached migration plan and attached implementation schedule):

   (i) 12.5 kHz becomes the standard channel bandwidth for new licenses in all PLMR Services 12 months following the adoption of the Report and Order. This insures economies of scale in equipment production for all PLMRS users. Importantly, it also provides public safety with the assurance of compatibility with Federal standards recently adopted by NTIA and now being implemented by many Federal agencies.

   (ii) The Report and Order should be revisited five years following adoption with the stated goal of reducing bandwidth to 6.25 kHz, based on engineering studies current at that time. (Note: this would not preclude earlier action, but would ensure the study would be left open and re-examined.)

6. Adopt a rule charging certified frequency coordinators in the Public Safety Services to limit transmitter power, antenna gain and pattern to that which is necessary to provide a signal strength contour of 5.0 microvolts at the extreme edges of the boundaries of the political jurisdiction for which the licensee is responsible. This is necessary to enhance signal penetration throughout the service area. Field strength plots may be required of the

applicant by the coordinator as deemed necessary to ensure coverage is limited to appropriate areas. These plots shall be prepared using standard models approved by the Commission. APCO is prepared to recommend appropriate non-proprietary models for this purpose.

7. APCO is not certain that the frequency stability proposed is appropriate, but agrees that improvement over present standards is required. APCO will reserve specific comments and recommendations until after further study has occurred.

8. The emission mask proposal should be modified to reflect the different potential modulation types that may be employed (i.e., FM, digital, ACSB etc.) This mask would essentially resemble a box, centered on the transmit frequency. It would have an absolute maximum value (60 dB down for example) at the edges of the box - 12.5 kHz for the first phase, or 6.25 kHz removed from the center frequency. This degree of protection should apply regardless of the modulation scheme utilized. APCO will work with the manufacturers and with the Commission's engineers to prescribe exact values. Some work in this regard has already been attempted within Project 25.

9. To facilitate near term effectiveness, power, deviation and channel widths as specified should be required at the end of the 12 month time period following adoption of the Report and Order. All new systems or equipment in which new frequencies are installed should be required to meet the frequency stability and the proposed emission mask for transmitters no later than 30 months after the Report and Order is adopted. Equipment should not be type accepted after 60 months following the adoption of the Report and Order, unless it meets the stated requirements. Existing licensed transmitters with designs that do not allow for reduction in power due to the generation of spurious harmonics must be grandfathered at current power levels until the current equipment is replaced. All users must convert to equiment meeting the new standards by a distant date certain (APCO will recommend an appropriate deadline at a future point.)

10. Leave the general designation of Public Safety on all channels as proposed, and on those which would be added or restored to public safety as a portion of this request.

Restore the original channel spacing of 25 kHz on all UHF channels from 450 to 512 MHz. Split this into 12.5 kHz increments in the first phase and 6.25 kHz in the second phase, still indexed on channels as they appear in Part 90. This would greatly facilitate near term use of the 12.5 kHz channels as they could be assigned for immediate use with appropriate geographic separation. This is precisely the methodology used in the NPSPAC 800 MHz plans, and as used with field strength plotting is providing excellent results and spectrum efficiency. As equipment improves, geographic separation can be reduced or eliminated.

Except on channels specifically designated for low power use in Part 90, modify power restrictions on all Public Safety Service channels as follows:

a. Remove the low power restrictions on all 12.5 kHz offset Public Safety Service channels in the 460-470 MHz band (including those between MEDS channels). Allow full power on these channels 12 months after adoption of the Report and Order, provided that all new equipment meets the 12.5 kHz parameters listed above. Continue to permit low power (2 watt) operation on a secondary basis as at present.

b. Retain low power restrictions on all 12.5 kHz offset Public Safety Service channels in the 450-460 MHz band. This restriction provides a "protected home" for thousands of low power (2 watt) systems that are critical to public safety communication operations around the United States.

This proposal would provide near term relief for frequency shortage in these two areas, and allow for expansion of existing systems, providing that new equipment, with higher standards, is procured.

11. There is a compelling need for mobile relay operation in the 150/160 MHz band. There are presently nearly 19,000 FB2 stations licensed in this band to all public safety services. In some areas, geography requires use of mobile relays for mobile-to-mobile radio coverage. It is imperative that this type of system be continued.

    Ideally, the band would be arranged into standard pairs, as in other portions of the spectrum. Unfortunately, this appears to be an extremely difficult, if not impossible, task due to lack of suitable spacing and channel assignments to various non-public safety services. The proliferation of non-standard systems that would require modification, and the cost and disruption of service to existing users (both simplex and mobile relay) further increases the difficulty of rearranging systems and developing standard pairing. However, some progress could possibly be made toward this end on a regional basis.

12. Specific channels in each band need to be reserved for mutual aid use. APCO believes that some of these channels should be service specific, at least for police, fire and medical, while others should be shared. APCO will provide specific recommendations in this area following consultation with other Public Safety Service frequency coordinators.

We will be in touch with you shortly to arrange a time to discuss these proposals in greater detail. We look forward to working with you and your staff in this important proceeding.

A copy of this letter is being submitted to the Secretary for inclusion in the record for PR Docket 92-235.

Sincerely,

John S. Powell
President

cc: Dr. Thomas Stanley

IMPLEMENTATION SCHEDULE

Summary

1. Signal strength is restricted by certified public safety coordinators to that necessary to cover political jurisdiction for all new licenses effective upon adoption. Refer to proposal #6.

2. Current 25 kHz channel spacing (420-512 mHz bands) is reduced to 12.5 kHz for all PLMR services upon adoption. Public safety coordinators can begin making primary assignments on new 12.5 kHz channels upon adoption of a band plan for each band, as long as no interference is caused to existing licensees. It is anticipated that many new assignments can be made immediately using geographic separation. Refer to proposals #5(i) and #10.

   APCO will present a separate time schedule for the 72 mHz band, and for the more difficult rechanneling of the 150-174 mHz band from 15 kHz to 12.5 kHz after consultation with other coordinators and with equipment manufacturers.

3. Deviation must be reduced to 4 kHz on all current equipment no later than 12 months after adoption. Refer to proposals #4 and #9.

4. Signal strength must be reduced by every licensee to only that necessary to cover licensee's political jurisdiction no later than 12 months after adoption, unless such reduction would lead to generation of spurious harmonics. Refer to proposal #9.

5. New systems, or equipment in which new frequencies are installed, must meet new frequency stability and emission mask requirements in all bands effective 30 months after adoption. Refer to proposal #9.

6. FCC revisits Report and Order no more than 60 months after adoption with stated goal of reducing bandwidth to 6.25 kHz, based on engineering studies current at that time. Refer to proposal #5(ii).

7. FCC removes type acceptance for sale within United States of new PLMR equipment which does not meet new frequency stability and emission mask requirements 60 months after adoption. Refer to proposal #9.

8. Date certain after which equipment that does not meet new frequency stability and emission mask requirements can no longer be used is being evaluated. It is anticipated that APCO will recommend a phase out by urban area similar to, but earlier than, that now proposed in Section 88.433(d).

150-174 MHz
15/12.5/6.25 KHz Frequency Plan

- Provides 90 to 100 new frequencies after migration to 12.5 KHz is complete (550 15 KHz to 650 12.5 KHz channels)
  - New Frequencies can be independently established within a six frequency block on a coordinated geographic basis

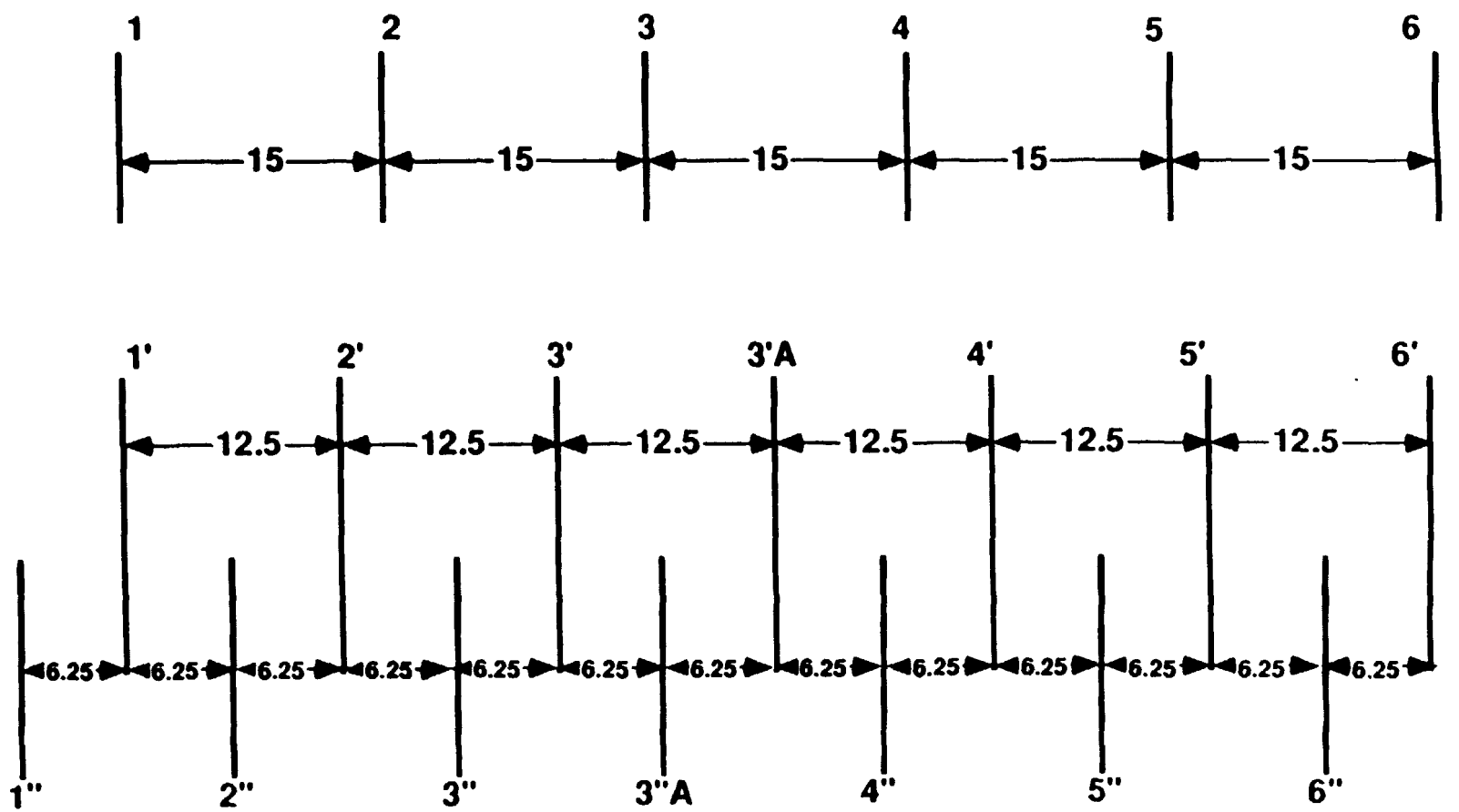
- Step 2 provides 1300 channels
  - Net 1300 channels vs. 550 today

- Provides users the option of either analog or digital FDMA during migration to 12.5 KHz

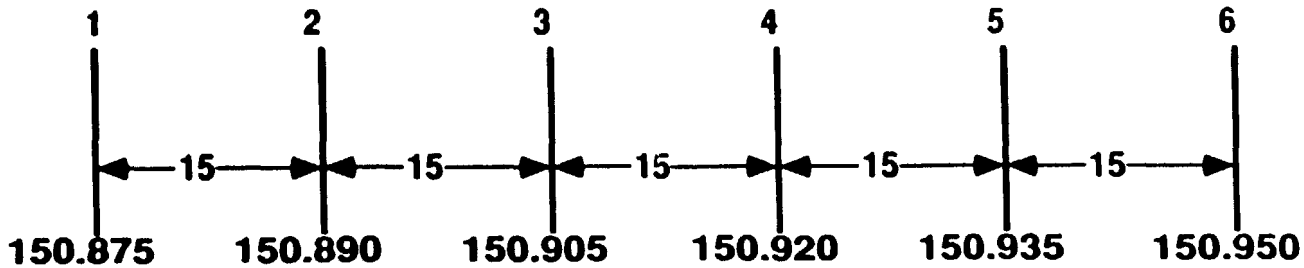
- Provides backward and forward compatibility and maintains interoperability (e.g. mutual aid) during migration

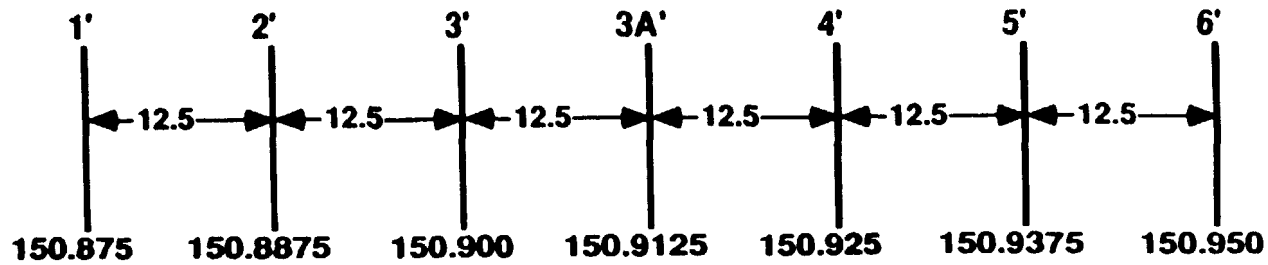
- Radio frequency synthesizer must be capable of today's 15 KHz channels and future 12.5 and 6.25 KHz channels.
  - New equipment licensed on current VHF frequencies (30 KHz/25 KHz/15 KHz) can be moved to 12.5 KHz frequencies in the future without modification

150 - 174 MHz
15 / 12.5 / 6.25 KHz Frequency Plan



150 - 174 MHz
15 / 12.5 / 6.25 KHz Frequency Plan





150 - 174 MHz
15 / 12.5 / 6.25 KHz Frequency Plan

Services	30/15KHz	Plan No.	12.5 / 6.25 KHz
PS	150.775		150.77500
			150.78125
PS	150.790	5	150.78750
			150.79375
	(150.800)*	6	150.80000
			150.80625
LA	150.815	2	150.81250
			150.81875
LA	150.830	3	150.82500
			150.83125
			150.83750
LA	150.845	4	150.84375
			150.85000
LA	150.860	5	150.85625
			150.86250
			150.86875
LA	150.875	6	150.87500
			150.88125
LA	150.890	2	150.88750
			150.89375
LA	150.905	3	150.90000
			150.90625
			150.91250
LA	150.920	4	150.91875
			150.92500
			150.93125

* Not Currently Available

150 - 174 MHz
15 / 12.5 / 6.25 KHz Frequency Plan
(Continued)

Services	30/15KHz	Plan No.	12.5 / 6.25 KHz
LA	150.935	5	150.93775
			150.94375
LA	150.950	6	150.95000
↓	↓	↓	↓
IS	151.550	1	151.55000
			151.55625
IS	151.565	2	151.56250
			151.56875
IS	151.580	3	151.57500
			151.58125
			151.58750
IS	151.595	4	151.59375
			151.60000
	(151.610)*	5	151.60625
			151.61250
			151.61875
IB	151.625	6	151.62500
			151.63125
	(151.640)*	2	151.63750
			151.64375
	151.655	3	151.65000
IB			151.65625
			151.66250
	(151.670)*	4	151.66875
			151.67500
			151.68125

* Not Currently Available

150 - 174 MHz
15 / 12.5 / 6.25 KHz Frequency
(Continued)

Services	30/15KHz	Channel Plan No.	12.5 / 6.25 KHz
IB	151.685	5	151.68750
			151.69375
	(151.700)*	6	151.70000
↓	↓	↓	↓
LX	152.270	4	152.27500
			152.28125
IB,LX	152.285	5	152.28750
			152.29375
IB,LX	152.300	6	152.30000
			152.30625
LX	152.315	2	152.31250
			152.31875
LX	152.330	3	152.32500
			152.33125
			152.33750
LX	152.345	4	152.34375
			152.35000
IB,LX	152.360	5	152.35625
			152.36250
			152.36875
IB,LX	152.375	6	152.37500

* Not Currently Available

Refarming
Private Land Mobile
450 - 470 / 470 - 512 MHz